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Book Reviews

Environmental Assessment of Products
Volume 1: Methodology, Tools, and Case Studies in Product

Authors: Henrik Wenzel, Michael Hauschild, Leo Alting
Publisher: Chapman & Hall, Kluwer Academic Publishers
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It is exciting to see such a thorough text on Life Cycle Assessment. This book will steadily replace the early, more qualitative and conceptual SETAC text as the best explanation of life cycle techniques. The origins of this book are in the commitment by Danish industry and Environmental Protection Agency to encouraged, with substantial resources, the use of life cycle for improvement of manufacturing and products. The magnitude of this commitment is impressive and is reflected in the material available to the reader of this book. A major benefit of this book is the education of professionals and students to life cycle principles and tools. However, a number of the figures, tables, and examples are of such good quality that these will be of immediate use to those currently involved with life cycle technology.

The organization of the book centers on three areas,
1) need and use of life cycle evaluations
2) methods and techniques
3) detailed examples of life cycle uses.

For the first area, the authors present a series of forces that are driving the expansion of life cycle applications. The historical summary is an important contribution of this book, describing the multiple legislative and environmental management systems that potentially influence industry to take a more unified approach. Clear information is given on the models of industrial systems and the flow of material, energy, and processes over a cradle-to-grave boundary. The authors achieve a world perspective in the development of life cycle and in the impacts that are described by the multi-national manufacturing system.

The methodology used in this book follows the classical three tier life cycle approach. However, in-depth applications have been used to significantly expand the content and to explain the subtleties involved in inventory, assessment, and decision-making. Since the authors have also developed extensive life cycle software, the progression of the book chapters has a very clear structure. The book information is generally more assessment than inventory.

The third area is examples and these are very rich in information and insight. The five examples are generally complex products, such as a refrigerator. Each begins with description and market context leading into the cradle-to-grave life cycle. The assessment allows determination of areas with the greatest influence. The authors are careful to identify what information is missing and often why. The decision-making aspects demonstrate the capability of life cycle to find pollution prevention options. It is of particular interest that the authors can integrate results into marketing, long-term corporate objectives, and the actual product development cycle.

In summary this book is excellent and is highly recommended to those in the manufacturing field. It really clarifies current and future implications of environmental issues on products and manufacturing. This book has an important role in the fields of industrial and chemical engineering, management, university education regarding life cycle, and sustainability.

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